

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket No.: 12217-100

REMARKS

In the present Office Action Claims 1-46 and 60-63 were examined. Claims 1-46 and 60-63 were rejected, and no claims were allowed.

By this Amendment and Response, Claims 1, 7, 33, 34, 37, 42, 60 and 63 are amended, no claims are cancelled and no claims are added. Accordingly, Claims 1-46 and 60-63 are presented in this Amendment and Response. Reconsideration and allowance in view of the amendments and remarks to follow is respectfully requested.

Before addressing the substance of the present Office Action, Applicants' representative thanks the Examiner for the courtesy of a personal interview held on July 21, 2004 to discuss the present invention and the prior art of record.

Rejection of Claim 34 under 35 U.S.C. §112, second paragraph:

In Section 3 of the Office Action the Examiner rejects Claim 34 under 35 U.S.C. §112, second paragraph, as failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention. Specifically, the Examiner notes a conflict between terms "one or more instructions" and "a next instruction" as recited in Claim 34.

Claim 34 has been amended with the Examiner's comment in mind to now expressly recite "a plurality of instructions." In view of the amendment, it is respectfully requested that the Examiner reconsider and withdraw the rejection of Claim 34 under 35 U.S.C. §112, second paragraph.

Rejections under 35 U.S.C. §103:

The Examiner maintains the rejection of Claims 1-46, 60, 61 and 63 under 35 U.S.C. §103(a) as being unpatentable over Skillman et al. (U.S. Patent No. 5,506,999) in view of Fischer (U.S. Patent No. 5,337,360). The Examiner maintains the rejection of Claim 62 under 35 U.S.C. §103(a) as being unpatentable over Skillman et al. and Fischer as applied to Claim 60 and further in view of Waclawsky (U.S. Patent No. 5,493,689). The Examiner also rejects Claims 1-46, 60, 61 and 63 35 U.S.C. §103(a) as being unpatentable over Skillman et al. in view of Walsh (U.S. Patent No. 6,233,601). Additionally, the Examiner rejects Claim 62 under 35 U.S.C. §103(a) as being

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket No.: 12217-100

unpatentable over Skillman et al. and Walsh as applied to Claim 60 and further in view of Waclawsky. These rejections are respectfully disagreed with and are traversed below.

The arguments and remarks made previously are repeated and incorporated by reference herein.

As previously discussed with the Examiner, Skillman is seen to describe conventional blackboard parallel processing wherein a general processing task is performed using a plurality of parallel processors. See the Abstract of Skillman. In such processing systems, separate identical processing modules respond to trigger messages such that the general processing task is accomplished as a series of smaller subtasks. For example, Skillman et al. describe knowledge sources (KSPs) that operate as independent tasks in response to specific triggers. That is, at Col. 13, line 64 to Col. 14, line 54, Skillman et al. describe, in pertinent part, that:

"For a given general task to be carried out by the blackboard processing system, each of the applications or knowledge sources executed by the KSPs can be considered as a collection of coarse-grained tasks with their own set of system function calls to access global database and scheduler information. Each knowledge source is independent of any other task, except for information or data that are required and which must first be generated by a previously executed knowledge source. Communication between knowledge sources running in different KSPs is supported indirectly through trigger messages from the BCU. Any knowledge source requiring notification of a global data element update defines a trigger condition that is used by trigger module 46 in the BCU to ensure all updates to the global data are sent by the BCU to the knowledge source in a trigger message.

Knowledge sources are of two types, including a spawn-always, which is initiated every time that an appropriate trigger signal is received from the BCU, resulting in the possibility that a plurality of independent knowledge sources, each with their own copy of execution codes and unique data on which to operate, are executed in response to the trigger signal, and a spawn-once knowledge source, which is initiated one time by BCU 106 after the first trigger condition is detected, and then subsequently initiated each time that the trigger condition is detected. BCU 106 maps spawn-always knowledge sources to the least loaded KSP, while a spawn-once knowledge source may need to be mapped to a specific KSP to accommodate requirements for hardware associated with that KSP. Each knowledge source can be thought of as an object that must be sent a trigger

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket No.: 12217-100

message by the scheduler module in the BCU in order for the knowledge source to execute. ”

In contradistinction, the present invention teaches and claims a data processing system that executes a script including a plurality of instructions in response to a corresponding event data signal. In other words, there is a one-to-one relationship between the event trigger and the script executed to perform a function in response to that event trigger.

The Examiner proposes combination of Skillman et al. with Fischer. Fischer is seen to describe a “traveling program” for automating data collection among a group of users and for conditionally deciding which of the group of users may participate in a digital signature process for approving various electronic forms. See Fischer at Col. 1, lines 48-52, Col. 2, lines 14-22 and Col. 5, line 62 to Col. 6, line 7. Fischer is also seen to describe a predefined “intelligence” (e.g., instructions) for transmitting the traveling program from a first user to a next user (e.g., from an engineer requesting a component part to his/her supervisor). For example, see Fischer at Col. 5, lines 33-66.

Neither Skillman et al. nor Fischer, alone or in combination, are seen to describe or suggest at least the incorporation and evaluation of dynamic information within currently executing instructions or the use of such dynamic information for selecting a next instruction (e.g., by a script) or for selecting a next processing module (e.g., by a task module) for processing the next instruction, as recited in the instant claims.

That is, in contradistinction, the present invention teaches and claims a data processing system that executes a script including a plurality of instructions in response to a corresponding event data signal. In other words, a data processing system where one event trigger invokes one script to perform a specific function. A task module provides dynamic information to the executing script. The script incorporates the dynamic information and based thereon, selects a next instruction to be executed. The task module evaluates the dynamic information including status of processing modules in the system and determines a processing module available to process the next instruction. The script then proceeds to the available processing module for execution of the next instruction, as recited in the independent claims as now written.

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket No.: 12217-100

In view of the foregoing, Applicants submit that independent Claims 1, 33, 34, 60 and 63 are clearly patentable over the Examiner's proposed combination of Skillman et al. and Fischer. As these independent claims are patentable over the cited documents, the claims that depend from and further limit these independent claims, must also be found to be patentable.

Accordingly, the Examiner is respectfully requested to reconsider and remove the rejection of claims 1-46, 60-61 and 63 under 35 U.S.C. §103(a) as being unpatentable over the proposed combination of Skillman et al. and Fischer.

With respect to Waclawsky, the Examiner states that Waclawsky discloses tracing execution of instructions and provides a mechanism for collecting and analyzing load data from processing modules. Without addressing this characterization of Waclawsky, it is submitted that Waclawsky is not seen to cure the deficiencies cited above with respect to Skillman et al. and Fischer and independent Claim 60, for example, where the cited documents do not describe or suggest incorporating and evaluating dynamic information within a currently processing instruction, and selectively executing the selected script in response to the dynamic information.

Since Waclawsky is not seen to cure these deficiencies, Claim 62 is deemed patentable over the Examiner's proposed combination of Skillman et al., Fischer and Waclawsky. Therefore, the Examiner is respectfully requested to reconsider and remove the rejection of claim 62 under 35 U.S.C. §103(a).

The Examiner also proposes combination of Skillman et al. with Walsh. Walsh is seen to describe a "mobile agent object" for executing a first method on a first computer, migrating from the first computer to a second computer and executing a second method on the second computer. The first and second methods and the first and second computers are predefined within an "itinerary." See Walsh at its Abstract. It is respectfully submitted that this method of instantiating object code (e.g., as object agents) and migrating such code from a repository (e.g., described in Walsh as a "codebase") throughout a computer network is well known in the art.

Even assuming, arguendo, that Walsh's method of migration is somehow combined with Skillman et al., it is respectfully submitted that the proposed combination would not suggest or

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket No.: 12217-100

make obvious the subject matter of the independent claims as now written. For example, the proposed combination of references would merely describe a system for employing parallel processing (KSPs) to carry out predefined sequences of instructions, the output of a first sequence of instructions initiating a second sequence of instructions (Skillman et al.'s conventional blackboard processing), wherein execution of the first and second sequences of instructions is performed in accordance with a predefined migration path (Walsh's itinerary defining which methods execute at which computers).

Accordingly, the proposed combination of Skillman et al. and Walsh is not seen to describe or suggest a data processing system where one event trigger invokes one script to perform a specific function. A task module provides dynamic information to the executing script. The script incorporates the dynamic information and based thereon, selects a next instruction to be executed. The task module evaluates the dynamic information including status of processing modules in the system and determines a processing module available to process the next instruction. The script then proceeds to the available processing module for execution of the next instruction, as recited in the independent claims as now written.

In view of the foregoing, Applicants submit that independent Claims 1, 33, 34, 60 and 63 are clearly patentable over the Examiner's proposed combination of Skillman et al. and Walsh. As these independent claims are patentable over the cited documents, the claims that depend from and further limit these independent claims, must also be found to be patentable.

Accordingly, the Examiner is respectfully requested to reconsider and remove the rejection of claims 1-46, 60-61 and 63 under 35 U.S.C. §103(a) as being unpatentable over the proposed combination of Skillman et al. and Walsh.

With respect to Waclawsky, it is submitted that Waclawsky is not seen to cure the deficiencies cited above with respect to Skillman et al. and Walsh and independent Claim 60, for example, where the cited documents do not describe or suggest incorporating and evaluating dynamic information within a currently processing instruction, and selectively executing the selected script in response to the dynamic information.

Since Waclawsky is not seen to cure these deficiencies, Claim 62 is deemed patentable over the Examiner's proposed combination of Skillman et al., Walsh and Waclawsky.

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket No.: 12217-100

Therefore, the Examiner is respectfully requested to reconsider and remove the rejection of claim 62 under 35 U.S.C. §103(a).

As noted above, clarifying amendments have been made to even further distinguish the independent claims from the cited documents. Appendix A, attached and incorporated by reference to this Amendment and Response, includes a detailed cross-reference of the clarifying amendments to portions of the specification where such amendments find support. Accordingly, no new matter is entered.

In view of the foregoing, Applicants submit that the independent claims, and the claims that depend therefrom, are patentable over the cited documents. The Examiner is respectfully requested to reconsider and remove the rejections of all of the pending claims and to allow the application as now presented. If a notice of allowance can not be issued, it is respectfully requested that the undersigned attorney be contacted to resolve any outstanding issues.

Respectfully submitted,
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Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket: 12217-100

APPENDIX A

Text of Claim	Support in Application
1. A data processing system, comprising: a plurality of event modules each including code that generates an event data signal representative of a particular event;	P18, L3-4
a plurality of scripts each having a plurality of instructions, each of said scripts invoked to perform a function in response to a corresponding one of said event data signals;	P12, L16-17; P23, L18-20
a plurality of processing modules distributed over said data processing system ...	P19, L1-7
... each including code that provides processed data; and	P18, L24 to P19, L1
a task module, selectively communicating with each of said plurality of event modules and said plurality of distributed processing modules, ...	P13, L22 to P14, L19; P18, L18-24
... said task module including code for selecting one of said plurality of scripts that corresponds to said event data signal ...	P30, L8-16
... and for executing said selected script such that said selected script proceeds to a first of said plurality of distributed processing modules for processing a current one of said plurality of instructions;	P14, L20 to P13, L22; P30, L17 to P31, L5
wherein dynamic information comprises statuses of said distributed processing modules and modifications to said selected script including processed data from previously processed ones of said plurality of instructions, ...	P13, L3-9
... and wherein during execution of said selected script said task module provides said dynamic information to said selected script, said selected script incorporating said dynamic information into said currently processing instruction for consideration thereof, ...	P14, L20 to P15, L22; P31, L6 to P33, L18
... and upon completion of said currently processing instruction of said selected script said selected script evaluates said incorporated dynamic information provided by said task module and processed data from said completed instruction and selectively executes a next one of said plurality of instructions of said selected script, and ..	P13, L3-9; P15, L6-13; P31, L14-16; and P36, L13 to P38, L12
... wherein said task module, utilizing said dynamic information, interacts with said plurality of distributed processing modules for selecting a second available one of said plurality of distributed processing modules such that said selected script proceeds to said second available one of said distributed processing modules for processing said next instruction within said selected script.	P15, L14-22; P16, L20-24; and P31, L16 to P32, L10

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket: 12217-100

APPENDIX A

Text of Claim	Support In Application
33. A data processing system, comprising: a plurality of event modules each including code that generates an event data signal representative of a particular event;	P18, L3-4
a plurality of scripts each having a plurality of instructions, each of said scripts invoked to perform a function in response to a corresponding one of said event data signals;	P12, L16-17; P23, L18-20
a plurality of processing modules distributed over said data processing system ...	P19, L1-7
... each including code for performing data processing functionality to provide processed data;	P18, L24 to P19, L1
a task module, selectively communicating with each of said plurality of event modules and said plurality of distributed processing modules, ...	P13, L22 to P14, L19; P18, L18-24
... said task module including code for selecting one of said plurality of scripts that corresponds to said event data signal and, ...	P30, L8-16
... during execution of said selected script, for providing dynamic information comprising statuses of said distributed processing modules and modifications to said selected script including processed data from previously processed ones of said plurality of instructions, said selected script incorporating said dynamic information into said currently processing instruction for consideration thereof and,	P13, L3-9; P14, L20 to P15, L22; P31, L6 to P33, L18; and P37, L10 to P38, L5
upon completion of said currently processing instruction of said selected script, said selected script evaluates said incorporated dynamic information provided by said task module and processed data from said completed instruction and selectively executes a next one of said plurality of instructions of said selected script, and	P13, L3-9; P15, L6-13; P31, L14-16; and P36, L13 to P38, L12
... wherein said task module, utilizing said dynamic information, interacts with said plurality of distributed processing modules for selecting a second available one of said plurality of distributed processing modules such that said selected script proceeds to said second available one of said distributed processing modules for processing said next instruction within said selected script; and	P15, L14-22; P16, L20-24; and P31, L16 to P32, L10
a resource management module communicating with each of said plurality of event modules, said task module and said plurality of distributed processing modules, ...	P26, L17-23
... said resource management module including code for monitoring event data signals generated by said plurality of event modules and not processed by said task module and a number of said plurality of distributed processing modules available for performing particular data processing functionality, and ...	P26, L24 to P27, L2

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket: 12217-100

APPENDIX A

... for converting data processing functionality of said plurality of distributed modules in response to dynamic information regarding said monitored event data signals and said number of available distributed processing modules to maximize a number of said distributed processing modules processing said event data signals.	P27, L2-13
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Serial No.: 09/030,258
Art Unit: 2128

Atty. Docket: 12217-100

APPENDIX A

34.	Text of Claim	Support in Application
	A method of data processing comprising the steps of: generating at least one event data signal at one or more peripheral modules;	P18, L3-4 and L16-20
	mapping said at least one event data signal to a selected script chosen from one or more scripts, each said one or more scripts having a plurality of instructions, each of said scripts invoked to perform a function in response to a corresponding one of said at least one event data signal; and	P23, L1-20
	executing, by a task module, said selected script such that said selected script proceeds to a first of a plurality of processing modules for processing a current one of said plurality of instructions of said selected script;	P14, L20 to P13, L22; P30, L17 to P31, L5
	wherein dynamic information comprises statuses of said plurality of processing modules and modifications to said selected script including processed data from previously processed ones of said one or more instructions, and ...	P13, L3-9
	... wherein during execution of said selected script said task module provides said dynamic information to said selected script, said selected script incorporating said dynamic information into said currently processing ones of said plurality of instructions for consideration thereof, and	P14, L20 to P15, L22; P31, L6 to P33, L18
	upon completion of said currently processing instruction of said selected script, said selected script evaluates said incorporated dynamic information provided by said task module and processed data from said completed instruction and selectively executes a next one of said plurality of instructions of said selected script, and ...	P13, L3-9; P15, L6-13; P31, L14-16; and P36, L13 to P38, L12
	... wherein said task module, utilizing said dynamic information, interacts with said plurality of processing modules for selecting a second available one of said plurality of processing modules such that said selected script proceeds to said second available one of said processing modules for processing said next one of said plurality of instructions within said selected script.	P15, L14-22; P16, L20-24; and P31, L16 to P32, L10

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket: 12217-100

APPENDIX A

60.	Text of Claim	Support In Application
	In a data processing system, a method for responding to event data, comprising:	
	receiving event data from a requesting one of a plurality of event modules;	P18, L3-4
	mapping the event data to a selected one of a plurality of scripts, the plurality of scripts including instructions for responding to event data;	P23, L1-20
	executing, by a task module, the selected script such that the selected script proceeds to a first of a plurality of processing modules for processing of a current one of the instructions of the selected script;	P14, L20 to P13, L22; P30, L17 to P31, L5
	wherein dynamic information comprises statuses of the plurality of processing modules and modifications to the selected script including processed data from previously processed ones of the instructions, and ...	P13, L3-9
	... wherein during the execution of the selected script the task module provides the dynamic information to the selected script, the selected script incorporating the dynamic information into the currently processing instruction for consideration thereof, and	P14, L20 to P15, L22; P31, L6 to P33, L18
	upon completion of said currently processing instruction of said selected script, said selected script evaluates said incorporated dynamic information provided by said task module and processed data from said completed instruction and selectively executes a next one of said plurality of instructions of said selected script, and ...	P13, L3-9; P15, L6-13; P31, L14-16; and P36, L13 to P38, L12
	... wherein said task module, utilizing said dynamic information, interacts with said plurality of processing modules for selecting a second available one of said plurality of processing modules such that said selected script proceeds to said second available one of said processing modules for processing said next one of said plurality of instructions within said selected script;	P15, L14-22; P16, L20-24; and P31, L16 to P32, L10
	building a response profile including results generated during execution of the selected script; and	P17, L18-21; P34, L17-24
	wherein when the instructions within the selected script are completed, transmitting the response profile to the requesting one of the plurality of event modules.	P17, L21-24; P34, L17-24

Serial No.: 09/030,258
Art Unit: 2126

Atty. Docket: 12217-100

APPENDIX A

63.	Text of Claim	Support in Application
	A data processing system, comprising: a plurality of event modules each including code that generates a first event data signal representative of a first event;	P18, L3-4
	a plurality of scripts each having a plurality of instructions, each of said scripts invoked to perform a function in response to a corresponding one of said first event data signals;	P12, L16-17; P23, L18-20
	a plurality of processing modules each including code that provides processed data, a subset of said plurality of processing modules having code that selectively generates a second event data signal representative of a second event; and	P18, L22 to P19, L12
	a task module, selectively communicating with each of said plurality of event modules and said plurality of processing modules, ...	P13, L22 to P14, L19; P18, L18-24
	... said task module including code for selecting ones of said plurality of scripts that corresponds to said first and second event data signals, and for executing said selected scripts such that said selected scripts proceed to a first of said plurality of processing modules for processing a current one of said plurality of instructions;	P32, L3 to P33, L18
	wherein dynamic information comprises statuses of said plurality of processing modules and modifications to said selected scripts including processed data from previously processed instructions, and ...	P13, L3-9
	... wherein during execution of said selected scripts, said task module provides said dynamic information to said selected scripts, said selected scripts incorporating said dynamic information into said currently processing instructions for consideration thereof, and	P14, L20 to P15, L22; P31, L6 to P33, L18
	upon completion of said currently processing instruction of said selected script, said selected script evaluates said incorporated dynamic information provided by said task module and processed data from said completed instruction and selectively executes a next one of said plurality of instructions of said selected script, and ...	P13, L3-9; P15, L6-13; P31, L14-16; and P36, L13 to P38, L12
	... wherein said task module, utilizing said dynamic information, interacts with said plurality of processing modules for selecting a second available one of said plurality of processing modules such that said selected scripts proceed to said second available one of said plurality of processing modules for processing of said next one of the plurality of instructions within said selected script.	P15, L14-22; P16, L20-24; and P31, L16 to P32, L10